

## **European pension funds and sustainable development.**

### **On trade-offs between finance and responsibility**

#### **Abstract**

Pension funds try to account for sustainable development in their operations. This mainly translates in responsible investing. We investigate how this interacts with the financial objectives. We use a survey among more than 250 pension funds based in 15 European countries. Multinomial logistic regression is used to find out how pension funds trade off sustainable development and financial objectives. Our findings suggest that pension funds that have not included responsibility in their strategy and investments have a clear priority for financial performance, whereas pension funds who integrate sustainable development in their strategy can bring balance between finance and responsibility.

**Keywords:** sustainable development; strategy; values; finance; responsible investment; pension funds

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## **1 Introduction**

We investigate how pension funds account for sustainable development and especially how they make trade-offs between social and environmental objectives on the one hand and financial objectives on the other. Society increasingly requires that financial institutions take account of society and that it advances sustainable development, especially after the global financial crisis (Shiller, 2013). Part of the financial industry has responded by promising it will do better. This promise is reflected in the signatories of the United Nations' sponsored Principles for Responsible Investment (PRI), which has more than 1,600 signatories with more than € 60 trillion assets under management as of December 2016 (UN PRI, 2016a). Such public responsibility commitments imply that the signatories first need to define what sustainable development or responsibility actually means in their organization, second how to include it in their strategy, third, how to consider it in their daily business and investments, and fourth, how to monitor and report it. For example, the first of the six PRI principles is 'the incorporation of ESG (environmental, social and governance) issues into investment analysis and decision-making'. To be able to do so, an organised way of considering these issues needs to be in place. Such commitments and actions relate to the management's values and motives regarding responsibility (Epstein & Roy, 2001; Hemingway & MacLagan 2004; Maon *et al.* 2008) and long-term value creation (Juravle & Lewis, 2008). In this respect, responsible investment may be regarded as pro-social behaviour. The second principle is 'being active owners and incorporate ESG issues into ownership policies and practices', which indicates the need for responsibility both at the level of strategy and practice. The directive of non-financial reporting by the European Union ("EU"), and the suggested shareholder directive which encourages investors to be active owners (EU, 2014ab) support these considerations. Commitment to general principles usually is much easier to achieve at the strategic level than in daily operations (Epstein & Roy, 2001). The rapid increase in the PRI's signatories is a clear witness of this observation. It shows that many financial institutions translate sustainable development objectives into responsible investment practices (Scholtens, 2006). By engaging in responsible investment, pension funds aim at better return-risk ratio of their investments while at the same time accounting for their fiduciary duty, namely acting in the interest of their

beneficiaries. This is particularly relevant for pension funds which are organizations that provide financial benefits for their beneficiaries (retirees). Pension funds manage substantial amounts of money, are highly regulated, and are assumed to act in line with their fiduciary duty. We investigate how pension funds deal with responsible investing in relation to their characteristics and values.

Our study assumes that the way in which responsible investment is implemented reflects the values of pension funds.<sup>1</sup> This is in line with Boiral *et al.* (2015) who find that environmental values play a role in the adoption of organizational citizenship behaviour regarding the environment. In the environmental psychology literature, it is suggested that several motives can impact pro-social behaviour (Lindenberg & Steg, 2007). In particular, they distinguish between altruistic, biospheric (i.e. environmental and societal) values and egoistic (i.e. here, egoistic) values (Lindenberg & Steg, 2007). We relate altruistic and biospheric values with the pension fund's responsibility focus, meaning that a fund does consider ESG performance. Its appreciation of financial performance is related to egoistic values. We will investigate whether responsibility and financial focus are the result of pension funds implementing their values in business operations.

Several studies investigate how ESG impacts financial returns. Some studies find that responsible investment delivers superior financial returns (e.g. Derwall *et al.*, 2005; Kempf & Osthoff, 2007; Amato & Amato, 2012; Charlo *et al.*, 2015; Martínez-Ferrero *et al.*, 2015). Other studies find no significant difference between conventional and responsible investments (e.g. Bauer *et al.*, 2005; Galema *et al.*, 2008; Renneboog *et al.*, 2011). And there are studies that show a negative association between the two (Fowler & Hope, 2007; Adler & Kritzman, 2008; De Haan *et al.*, 2012). Further, some studies find that controversial investments ('sin stocks') can bring superior financial returns (e.g. Hong & Kacperczyk, 2009).

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<sup>1</sup> Values serve as guiding principles in the life of a person or other social entity and they are the antecedents of behaviour such as attitudes and behavioural intentions (e.g. Schwartz, 1992; Stern & Dietz, 1994; Stern, 2000; Berkhout & Rowlands, 2007; De Groot & Steg, 2009; Ervin *et al.*, 2013; Williams and Schaefer, 2013; Steg *et al.*, 2014).

We study the interaction of the responsibility and financial focus of pension funds. To this extent, we rely on survey data based on the self-reporting of pension funds from 15 European countries, consisting of more than 250 pension funds with a great diversity regarding responsible investing. Our hypotheses are that appreciation of responsibility focus is to be associated with the probability that a pension fund has incorporated responsibility in its strategy and that appreciation for the financial focus is to be associated with the probability that a pension fund has not incorporated responsibility in the strategy.

We use multinomial logistic regression to measure the impact of relating to responsibility focus and financial focus. Our main findings are that both financial focus and responsibility focus are positively related to the probability that a pension fund accounts for responsibility in its investment strategy. The contribution of our study is threefold. First, as far as we are aware of, we are the first to explicitly study the interaction between responsibility focus and financial focus. Second, we extend the literature by explaining how values are transferred from the financial management to the pension fund, and how they are connected to the strategy and practice. Third, our results about pension fund characteristics in relation to their responsibility provide hitherto unexplored insights.

We first provide a review of the literature and derive our hypotheses. The data and methods are introduced in section three. Section four presents the results. The conclusions are in section five.

## **2 Literature**

### *2.1 Responsible investment as a way to demonstrate values*

Values that relate to pro-social behaviour, such as responsible investment, are affected by several factors such as gender, education, level of income, age, and level of adoption of innovation (Nilsson, 2008; Shen & Saijo, 2008; Cheah *et al.*, 2011; Jansson & Biel, 2011). They seem to be time dependent (Bengtsson, 2008) and reflect characteristics of different cultures (Scholtens & Sievänen, 2013) as well as institutional contexts (Buegl *et al.*, 2009), and they relate to the public sector (Van der Wal & Huberts, 2008; Sievänen, *et al.*, 2013) as well as to the political perspective (Hong & Kostovetsky, 2012). Values also

impact the decision making behaviour of households, companies and organizations (Bénabou & Tirole, 2010; Carbone *et al.*, 2012). Responsibility of an organisation is related to the values of the management (Epstein & Roy, 2001; Hemingway & MacLagan 2004; Maon *et al.* 2008). To address responsibility in an organized way, the values first need to be incorporated in the strategy and in then in daily business operations. In this way, responsible investment allows responsible investors to incorporate concerns about the environment and social issues into their investment decisions (Nilsson, 2008).

Especially egoistic, biospheric and altruistic value orientations have proven to be useful when explaining pro-social behaviour and pro-social behavioural intentions (Bénabou & Tirole, 2010; see also Steg *et al.* 2014). Givens and Jorgenson (2011) find that a higher level of national affluence reduces the likelihood of individual level pro-environmental concern, whereas economic development and growth in environmental degradation both increase the likelihood of such values. This relates to the findings that several demographic and psycho-social factors such as income (Brandon & Lewis, 1999), religion (Angelidis & Ibrahim, 2004), self-identity and membership of an environmental organization (Whitmarsh & O'Neill, 2010) seem to explain pro-social behaviour and behavioural intention.

The values of investors may be reflected in their strategy and in their daily business operations, especially investing (Epstein & Roy, 2001; Hemingway & MacLagan 2004; Maon *et al.* 2008). Ethical investors focus typically on excluding controversial investment sectors such as alcohol, tobacco and weapons. This ensures that their investments are aligned with their values. Responsible investors also use exclusions, but to a lesser extent as they aim at better return-risk ratio by diversification of the assets in their portfolio, which is in line with the modern portfolio theory (Markowitz, 1991). Responsible investors expect their long-run financial returns to be even higher than those of conventional investments (see Renneboog *et al.*, 2008). Several authors indicate that both individual (Rosen *et al.*, 1991) and institutional investors (Renneboog *et al.*, 2008) are unwilling to sacrifice financial returns when investing responsibly. The effort to reduce risks that impact the financial return especially motivates institutional investors (Jansson & Biel, 2011). This study considers that the egoistic value orientation is displayed by the expected level of

financial performance, i.e. financial focus. Social conscience and social health issues (Jansson & Biel, 2011), human resources and industrial relations (Marshall, et al., 2009), as well as labour relations (Rosen et al., 1991) indicate the altruistic and biospheric value orientations of investors. Pasewark (2010) also finds that profitable investments in companies such as tobacco producers can intensify investors' concerns about the societal effects of their investments. However, for a pension fund, it seems impossible to disentangle altruistic and biospheric values because the limits of the data do not allow this. Hence, we combine these two altruistic values into one, namely responsibility focus.

## *2.2 The transmission of values from individuals to pension funds*

The values of stakeholders (i.e. current and future retirees of the pension fund and the owners, employees and sponsors) can influence the values of the pension fund through governance. There is large variation in governance systems of pension funds across and within countries (Clark, 2008), but a general governance structure exists. A pension fund has a governing body which retains the ultimate responsibility for the pension fund in all respects, including safe and profitable asset management even if some functions are delegated to external service providers (OECD, 2009). The responsibilities of the governing body should focus solely on strategic decisions and oversight functions, not on operational responsibilities. An independent auditor is needed, and an actuary for defined benefit plans. The OECD (2009) also suggests a supervisory body whose main functions are the selection and oversight of the governing body. Usually, the governing body is the management board which' members represent the stakeholders (Clark, 2007; OECD, 2009) and therefore includes representatives for the current and future retirees and for the sponsor of the plan. Hence, the values of the stakeholders are formally represented in the governing body that makes the decisions. The representatives of the governing body can thus bring inclusion of responsibility to the strategy and practice to the agenda. Based on the outcomes, responsibility and financial values are then brought to practice by individuals that make the investment decisions regardless whether the funds are internally or externally managed (UN PRI, 2016b).

Typically, the representatives in the governing body have both individual and collective responsibility for the decisions (Clark, 2000). De Villiers et al. (2011) document that better environmental performance in companies may be related to more board independence. Furthermore, they find that environmental performance is better in companies that have larger boards, larger representation of active CEOs on the board, and more experts. This aligns with the findings of Clark and Wójcik (2007) that for ensuring the long-term perspective of pension fund investments, it is crucial that the governing body has the required expertise (see also Kakabadse & Kakabadse, 2005).

### *2.3 Motives for pension fund responsible investment*

Changes in personal and collective values relating to sustainable development, climate change, government initiatives, corporate scandals and commercialising responsible investment may motivate inclusion of responsibility in pension funds' strategies and investment practices (Bengtsson, 2008; Lewis & Juravle, 2010), indicating a longer-term perspective for the strategy and value creation (Juravle & Lewis, 2008). Acknowledging the primary aim to obtain better return-risk ratio, we classify the motives to invest responsibly in four categories: doing good for its own sake, complying with stakeholder demands, reputation, and complying with regulations and industry codes. Doing good for its own sake relates to the societal movement towards a more sustainable world (Bengtsson, 2008; Lewis & Juravle, 2010). Universal owners, such as the large Norwegian Government Pension Fund Global (NGPFG), can impact the corporate behaviour of the investee companies due to large ownership (Thamotheram & Wildsmith, 2007). By doing so, they can impact corporate norms and conduct regarding the companies' environmental and social performance (Sjöström, 2010).

The second category is stakeholder demand with the objective of stakeholder value creation. The central stakeholder groups of pension funds include current and future retirees of the pension plan, sponsors, owners and employees of the pension fund, as well as those of the investee companies. Criteria such as employee welfare and environmental performance represent intangibles that are crucial for the creation of added value for the stakeholders such as owners (Jiao, 2010). Large corporations also increasingly adopt

governance practices that are consistent with global expectations regarding shareholder value, regardless of national regulations and policies (Bauer *et al.*, 2008). It has been suggested that regulators' attention should shift from disclosure of method to the integrity of information attached to responsible investment (Haigh & Guthrie, 2010).

The third category is reputation. It interacts both with the pension fund and the investee company (Bénabou & Tirole, 2010). This is because institutional investors are increasingly sensitive to reputational risks of the investee companies as these may directly impact their portfolio returns (Clark & Hebb, 2005). As such, institutional investors have a strong incentive to engage in pro-social behaviour.

The fourth category is complying with regulations and industry codes. Typically, pension fund investments are regulated to ensure pension payments for current and future retirees (OECD, 2006, 2009, 2011). This relates to fiduciary duty which suggests that pension funds should act in the best interest of their beneficiaries (Richardson, 2009). It can be ambiguous for pension funds to know to which extent fiduciary duty actually enables responsible investment. As some studies report a negative impact of ESG on financial return (e.g. De Haan *et al.*, 2012), this can raise conflicting goals between responsibility focus and financial focus. Traditionally, decent financial return on investments is related to the core task of the pension fund with respect to return and risks (OECD, 2006).

To conclude, it seems that there are two main reasons for pension fund responsible investment. The first is to improve financial return-risk ratio of the pension fund (egoistic values) and the second is as a goal of its own based on the four groups of motives (altruistic and/or biospheric values). In all, different motives may play a role regarding the conduct of pension funds. The interaction of the motives relating to financial focus (egoistic values) and to responsibility (altruistic and biospheric values) seems evident: financial focus might negatively affect responsibility focus as it could increase risks originating from ESG. Respectively, strict responsibility focus can indicate that financial focus suffers.



## 2.4 Hypotheses

Altruistic, biospheric and egoistic value orientations have proven to be useful when explaining pro-social behaviour and behavioural intention (Bénabou & Tirole, 2010; Steg *et al.* 2014). The literature suggests that responsible investments of a pension fund may be driven by motives that relate to responsibility focus (Clark & Hebb, 2005; Bénabou & Tirole, 2010) and to financial return (e.g. Bauer *et al.*, 2005; Galema *et al.*, 2008; Renneboog *et al.*, 2011). However, this literature does not specifically investigate the interaction or trade-off between responsibility and finance. We want to find out how European pension funds manage with these potentially conflicting goals. Our hypotheses are as follows:

*H1: There is a positive association between altruistic/biospheric values (proxied by Responsibility focus) of a pension fund and having a responsible investment strategy.*

*H2: There is a negative association between egoistic values (proxied by Financial focus) of a pension fund and having a responsible investment strategy.*

## 3 Data and Methodology

We test the hypotheses by using pension fund survey data consisting of more than 250 pension funds (281) from 15 countries: Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Italy, Luxemburg, Norway, Spain, Sweden, Switzerland, the Netherlands and the United Kingdom (described in Sievänen *et al.* 2013). The sampling targeted pension funds, the financial authorities of each country, and the directory of “Pension funds and their advisers 2008” (Wilmington, 2008) as the sources for contact information, irrespective whether they were familiar with responsible investing. The number of respondents listed in the forthcoming tables may vary, because some respondents did not answer all the questions. We classified the pension funds on the basis of whether they had a responsible investment strategy, as inclusion of responsibility values and financial values in the strategy takes place through the management board (governing body) that is also responsible for the outcomes of implementation (OECD 2009).

We measured the dependent variable of whether the pension fund has a responsible investment strategy (“Our pension fund has a responsible investment strategy”) on a Likert scale, where 1 = completely disagree, 7 = completely agree and 8 = I do not know. We excluded the last response class, 8, (0.4% of respondents) from the analysis. We classified the respondents into three classes: pension funds which have no clear responsible investment strategy (classes 1-3; 37.0% of respondents; “conventional pension funds; abbreviated as C), neutral ones (only class 4; 10.9%; “neutral pension funds”; N), and pension funds with a responsible investment strategy (classes 5-7; 51.8%; “pension fund with a responsible investment strategy”; RI). This classification enables the characterisation of deviations towards conventional and responsible investment strategies from the neutral position. The distribution of the observations of the dependent variable for each response class is in Table 1.

[Insert Table 1 about here]

To measure the interaction of responsibility focus and financial focus, we used two independent variables, “Our pension fund has investments that we consider to be responsible investments” (Responsibility focus,  $r$ ) and “If responsible investment means lower financial return, we cannot do it” (Financial focus,  $f$ ). Both variables used a Likert scale, where 1 = completely disagree, 7 = completely agree and 8 = I do not know (excluded from the analysis). In total, we use three variables: the dependent variable measures whether responsibility is accounted for in the strategy, and the two independent variables measure the practice, i.e. how Responsibility focus  $r$  and Financial focus  $f$  interact.

[Insert Table 2 and 3 about here]

To examine the potential conflict of interest between Responsibility focus  $r$  and Financial focus  $f$ , we estimated the response class probabilities for the three classes of pension funds (C, N, RI) by using multinomial logistic model (Hosmer and Lemeshow, 1989). Multinomial logistic regression has been

used in finance (Ongena & Ilkay, 2011), in decision making (Daley, 2008), when studying preferences (Larsen & Harlan, 2006; Sharp et al., 2011) and in environmental studies (Trexler & Travis, 1993; Mzoughi, 2011). In general, we find Hosmer and Lemeshow (1989) a good statistical reference to these models (under the heading “polynomous logistic regression”), where the necessary formulas can be found. We have specified the model formulas in the “Results and discussion” section. In our case the model describes the dependency of the probability of a respondent to fall in one of the three response classes: C, N and RI as a function of the independent variables Responsibility focus  $r$  and Financial focus  $f$ . In ordinary logit models the response is binary i.e. has two possible results, ‘success’ and ‘failure’. The model is:

$$(1) \quad \text{logit}(p) = a + b*r + c*f$$

where  $p$  is the probability of success,  $r$  and  $f$  are the values of the independent variables Responsibility focus  $r$  and Financial focus  $f$ , and  $a$ ,  $b$  and  $c$  are parameters that are estimated from the data. In our case, the dependent variable takes three values C, N and RI, which calls for multinomial logistic models. These models can best be understood as two ordinary logistic models with N as the ‘failure’ class and C and RI as ‘success’ classes, respectively. In the multinomial model this means that we use N as the reference class. These two logistic models have altogether six parameters. The success probabilities  $p(C) = p(C|r, f)$  and  $p(RI) = p(RI|r, f)$  are functions of the independent variables and the parameters can be estimated from the data. The two models are combined by normalising the probabilities  $p(C)$ ,  $p(N)$  and  $p(RI)$  such that their sum equals 1. The multinomial approach is also applied when there is only one explanatory variable, be it Responsibility focus  $r$  or Financial focus  $f$ .

The effect of the two independent variables on the three probabilities is described by using odds ratios (OR), which can be calculated from the estimated parameter values. Odds ratio is a typical tool in (even multinomial) logistic models. It is a measure of discrepancy between two proportions, and it carries information on both the direction and the size of the effect (Rita & Komonen, 2008; Hosmer & Lemeshow, 1989). The odds ratios are calculated by first transforming the two proportions to be

compared into odds. The odds corresponding to a proportion  $p$  is defined as  $p/(1-p)$ , i.e. the ratio of the probability that an incident takes place to the probability that it does not. Then, the odds of the proportions of C and RI for each independent variable are compared to the odds of N by calculating their ratio, i.e. the odds ratio. We used PASW Statistics 18.0 software for the analysis, which by default excludes cases with missing values listwise. For the odds ratios that are below one, indicating decrease in the probability, we use the technique suggested by Rita and Komonen (2008). It makes the results comparable with odds ratios that are above one (indicating increase), and add the exponent of “-1” to inform that the direction of the effect is downwards. This technique is useful because from below, odds ratios are limited by zero, whereas from above, there is no limit. In other words, the neutral value of an odds ratio (1) can decrease only by 100%, whereas its increase is not limited. This technique makes it easy to compare the size of the effects in opposite directions.

#### 4 Results and discussion

Table 4 provides the estimation results for three different models: in the first two univariate models Responsibility focus  $r$  and Financial focus  $f$  act separately as independent variables, in the third, both independent variables are included. As we have three response classes (C, N, RI), we need three equations, one for each of the response classes. These models are given in Equations 2-4. The univariate models, which contain only  $r$  or  $f$  are obtained from Equations 2-4 by setting the other independent variable to their average value.

The equations are:

$$(2) \quad p(C|r, f) = \exp(\alpha_C + \beta_{Cr} * r + \beta_{Cf} * f) / [1 + \exp(\alpha_C + \beta_{Cr} * r + \beta_{Cf} * f) + \exp(\alpha_{RI} + \beta_{RIr} * r + \beta_{RI} * f)]$$

$$(3) \quad p(N|r, f) = 1 / [1 + \exp(\alpha_C + \beta_{Cr} * r + \beta_{Cf} * f) + \exp(\alpha_{RI} + \beta_{RIr} * r + \beta_{RI} * f)]$$

$$(4) \quad p(RI|r, f) = \exp(\alpha_{RI} + \beta_{RIr} * r + \beta_{RI} * f) / [1 + \exp(\alpha_C + \beta_{Cr} * r + \beta_{Cf} * f) + \exp(\alpha_{RI} + \beta_{RIr} * r + \beta_{RI} * f)]$$

where

-  $p$  is the probability of belonging to a specific response group class which are:

- $C$  conventional pension funds
- $N$  pension funds with a neutral stance towards the existence of a responsible investment strategy
- $RI$  pension funds with a responsible investment strategy

$r$  and  $f$  are the values for the independent variables Responsibility focus and Financial focus and

- $\alpha_C$  is the constant for response class C (“conventional PF”)
- $\alpha_{RI}$  is the constant for response class RI (“PF with a RI strategy”)
- $\beta_{Cr}$  is the coefficient for “Responsibility focus” for the response class C (“conventional PF”)
- $\beta_{Rr}$  is the coefficient for “Responsibility focus” for the response class RI (“PF with a RI strategy”)
- $\beta_{Cf}$  is the coefficient for “Financial focus” for the response class C (“conventional PF”)
- $\beta_{Rf}$  is the coefficient for “Financial focus” for the response class RI (“PF with a RI strategy”).

The estimation results of the first univariate model are reported in Table 4 and show that the odds ratio for Responsibility focus  $r$  equals  $1.613^{-1}$  ( $p < 0.001$ ). This odds ratio is derived as 1 divided by the original OR, 0.620. Values of the odds ratio below 1 reveal that when the value of Responsibility focus  $r$  increases by one unit on the Likert scale, the probability of belonging to the class of conventional pension funds decreases. This contrasts with pension funds with a responsible investment strategy as their odds ratio is 1.471 ( $p < 0.001$ ). Hence, the increase of Responsibility focus  $r$  increases the probability of falling into the class of pension funds with a responsible investment strategy. This indicates a connection of responsibility between strategy and practice and supports the link between responsible investment and the values and motives that relate to responsibility. This also supports the finding that differences in ethical and moral issues help explain the differences between responsible and conventional investors. Furthermore, the finding is in alignment with several studies which find that biospheric and altruistic

value orientations can be associated with pro-social behaviour and pro-social behavioural intention. In summary, the estimation results suggest that one unit increase in Responsibility focus  $r$  reduces the probability of a pension fund to fall into the conventional pension fund class and increases the probability of belonging to the class of pension funds with a responsible investment strategy. These opposite effects are roughly equal (OR 1.613<sup>-1</sup> vs. OR 1.471). The variable Responsibility focus  $r$  is statistically significant at the model level ( $p = 0.000$ ). To conclude, more responsibility considerations seem to be associated with a responsible investment strategy, and there is no significant association with a conventional investment strategy.

Table 4 also shows that the odds ratio for Financial focus  $f$  is 1.399 ( $p < 0.05$ ) for the conventional pension funds. This implies that when the value of Financial focus  $f$  increases by one unit on the Likert scale, the probability for a pension fund to fall into the class of conventional pension funds increases as well. This variable is significant at the 5% level with conventional pension funds, whereas for pension funds with a responsible investment strategy it isn't (OR 1.100,  $p=0.365$ ). This result indicates that as such, Financial focus  $f$  is appreciated by the conventional pension funds more strongly than by the pension funds with a responsible investment strategy. This finding supports the results of Renneboog et al. (2008) who find that institutional investors are not willing to accept suboptimal financial performance to pursue responsibility. The finding also is in line with studies that report responsible investing to deliver lower financial returns than conventional investing (e.g. De Haan *et al.*, 2012). Furthermore, the results reveal that Financial focus  $f$  is appreciated by the conventional pension funds almost as strongly as Responsibility focus  $r$  is by funds with a responsible investment strategy (OR 1.399 vs. 1.471). The variable Financial focus  $f$  obtains statistical significance ( $p=0.000$ ) at the model level. In other words, a stronger focus on financial considerations seems to be associated with a conventional investment strategy, but to some extent also with a responsible investment strategy.

The multivariate model contains the independent variables Responsibility focus  $r$  and Financial focus  $f$  (equations 2-4). The multivariate, third model (Table 4) contains independent variables Responsibility

focus  $r$  and Financial focus  $f$  (equations 2-4). For conventional pension funds, the estimate for Responsibility focus  $r$  is slightly smaller than in the univariate model: OR is 0.628 or 1.593-1 ( $p < 0.001$ ), and for Financial focus  $f$  it is slightly smaller as well: OR is 1.297 ( $p < 0.05$ ). For the pension funds with a responsible investment strategy, the estimates for both variables slightly increase: OR for Responsibility focus  $r$  is now 1.473 ( $p = 0.001$ ) and for Financial focus  $f$  it is 1.117 ( $p = 0.308$ ). It appears that the odds ratios remain roughly the same for both classes, which confirms the low correlation between Responsibility focus  $r$  and Financial focus  $f$ , which also was detected in Table 3. For Responsibility focus  $r$  the p-value is significant in both pension fund classes, and for Financial focus  $f$ , it is significant for conventional pension funds. At the model level, the p-value for Responsibility focus  $r$  is 0.000 whereas for Financial focus  $f$  it changes into 0.078. In summary, for conventional pension funds, the Responsibility focus  $r$  is slightly smaller than in the univariate model and for Financial focus  $f$  it is slightly smaller as well. For the pension funds with a responsible investment strategy, the estimates for both variables slightly increase.

The estimation results in Table 4 make us conclude that the 'distance' to the neutral funds for the variable Responsibility focus  $r$  is about the same size for both pension fund classes (C, RI). The sign of the odds ratio clearly shows the opposite direction, which supports our hypotheses: more responsibility considerations are to be associated with pension funds with a responsible investment strategy but not with a conventional investment strategy. The estimation results show that a lower appreciation for Responsibility focus  $r$  and more Financial focus  $f$  increase the probability that the pension fund does not have a responsible investment strategy i.e. tends to be a conventional pension fund. An interesting result is that a higher appreciation for Responsibility focus  $r$  and more Financial focus  $f$  both seem to slightly increase the probability that the pension fund has a responsible investment strategy. These results indicate that when both responsibility and financial focus are investigated together, in the case of conventional pension funds, the results stay almost the same as in the models with one of these variables only. As the results stay almost the same, for a fixed value of financial focus, the responsibility focus may vary on its

own, i.e. financial and responsibility focuses only slightly depend on each other. Conventional pension funds do not seem to pay attention to responsibility focus, but instead favour financial focus. Pension funds with a responsible investment strategy seem to pay attention to both responsibility and financial focus more intensively when both are investigated together.

[Insert Table 4 about here]

In order to get a more thorough understanding of the problem at hand, we calculate response class probabilities as a function of the dependent variable, based on Responsibility focus  $r$  and Financial focus  $f$  (see equations 2-4). Figure 1 enables us to see how the effects of Responsibility focus  $r$  and Financial focus  $f$  relate to the probability of having a responsible investment strategy throughout the whole response range (see table 2; ranges 1-7), and thus characterises the impact of the dependent variable with respect to the three response class probabilities (C, N, RI).

[Insert Figure 1 about here]

Figure 1. The impact of Responsibility focus  $r$  and Financial focus  $f$  on the probability for a pension fund to fall into each of the response classes.

In Figure 1, the continuous descending grey curve (1.) shows the importance of Responsibility focus  $r$  for conventional pension funds at different levels of the variable. The pension funds that have completely disagreed (i.e., chosen '1' on the question of whether they have responsible investments) have a probability of 0.85 to belong to the class of conventional pension funds. Hence, Responsibility focus  $r$  strongly explains why a pension fund belongs to the class of conventional pension funds. For the response level 2, the probability is around 0.75, whereas for the response levels 5-7, the probability drops to around 0.25 – 0.08 at the higher levels of the variable Responsibility focus  $r$ . These results suggest that zero or very little responsibility considerations strongly indicate that the pension fund has not included responsibility in its strategy.



The ascending black curve (2.) shows the impact of Responsibility focus  $r$  for the pension funds with a responsible investment strategy. It seems that this curve is almost completely opposite to that of the conventional pension funds. The pension funds that have replied 1 or 2 have a probability of around 0.08 to have a responsible investment strategy. At the other end of the curve, the probabilities are beyond 0.80. Thus this variable provides clear evidence of the variable Responsibility focus  $r$  in determining the existence of a responsible investment strategy. In addition, Figure 1 includes the fairly horizontal curve (3.) of the neutral pension funds. We have not reported these results in the Table 1, as we used this class as the reference. It appears that the impact of the Responsibility focus  $r$  on the probability of falling into the neutral class is very limited. These results suggest that a lot of responsibility considerations strongly indicate that the pension fund has included responsibility in its strategy. For neutral pension funds, the results give only limited indication whether they did so.

In Figure 1, curves 4., 5., and 6. suggest that Financial focus  $f$  has a weaker impact on the classification of the pension funds than the variable Responsibility focus  $r$ . The curves relating to Financial focus  $f$  are mostly horizontal. Thus the probability of being a conventional pension fund, neutral pension fund, or a pension fund with a responsible investment strategy, changes much less across the levels of Financial focus  $f$  than across Responsibility focus  $r$ . This seems to contradict with the stronger bond between conventional investing and the importance of the financial focus, which we expected in hypothesis 2. However, curve (4.) shows an increasing trend. Within the range 1-3 (curve 4.), the respondents disagree with the claim that if responsible investment means lower financial return, they cannot do it, i.e. within this range the respondents may consider taking into account responsible investment criteria, even if it delivers less financial returns. At the other end of the range, the two curves (4. and 5.) become much closer and the differences in the probabilities become much smaller. These results suggest that pension funds, regardless whether they have a responsible investment strategy, may not be willing to undertake responsible investment practices if this would result in lower financial returns and/or higher risk.

A comparison of the curves shows that Responsibility focus  $r$  (curves 1., 2. and 3.) differentiates the conventional pension funds and the pension funds with a responsible investment strategy in a much clearer way than the Financial focus  $f$  does (curves 4., 5. and 6.). The results give support for the first hypothesis that there is *a positive association between altruistic/biospheric values (Responsibility focus  $r$ ) of a pension fund and having a responsible investment strategy*. The second hypothesis, *a negative association between egoistic values (Financial focus  $f$ ) of a pension fund and having a responsible investment strategy* gets much less support.

We conclude that pension funds with a responsible investment strategy connect both Responsibility focus  $r$  and Financial focus  $f$  (Table 4, Figure 1). This finding suggests that the two are not mutually exclusive. This connection of strategy and practice is in line with studies that find that pro-social behaviour and pro-social behavioural intentions result from values that guide individuals and social entities (De Groot & Steg, 2009; Steg *et al.*, 2014). The finding that pension funds connect their strategy with financial focus is compatible with the findings of several authors (Bénabou & Tirole, 2010) and with fiduciary duty (Richardson, 2009). Hence, we think we can confirm that egoistic, biospheric and altruistic value orientations are helpful when it comes to explaining pro-social behaviour and of pension funds.

Our results suggest that pension funds with a responsible investment strategy connect their values that are included in the strategy. This can support long-term value creation (Juravle & Lewis, 2008). We find that conventional pension funds prefer financial focus above responsibility focus. This finding strengthens the traditional image of these investors. Although some studies document responsible investing to deliver lower financial return than conventional investing (e.g. De Haan *et al.*, 2012), the comparison of results of pension funds that have a responsible investment strategy and their conventional peers reveals that both share the financial focus. Actually, Figure 1 shows that financial focus is more strongly related to the probability that a pension fund has a responsible investment strategy than that it does not. For neutral pension funds, neither responsibility focus nor financial focus explains their attitude. All this very well

reflects the fact that pension funds are in a transition period when it comes to positioning themselves regarding responsible investment and integrating sustainable development in their business strategy.

## **5 Conclusion**

We investigate how pension funds make trade-offs between sustainable development and financial performance. At the level of the firm, sustainable development translates into accounting for environmental, social and governance policies and performance. For pension funds, this is especially evidenced in responsible investing. We investigate the priorities or focus of these institutions regarding responsible investing and finance. We study funds with varying degrees of responsibility financial focus. This is a salient topic because previous studies mainly focus on the impact of responsibility on the financial returns and do not investigate the interaction of these two from the perspectives of values and motives and, in fact, take responsibility for granted.

To study these potentially conflicting goals, we investigate different values and motives that relate to both responsibility focus (altruistic and biospheric values) and financial focus (egoistic values) of pension funds. We use survey data of pension funds from 15 European countries and test our hypotheses with multinomial logistic regression.

We find that pension funds that combine strong financial focus with strong responsibility focus are very likely to have incorporated responsibility in their strategy. This supports earlier research that finds a positive relationship between the values and motives of management and responsibility (Epstein & Roy, 2001; Hemingway & MacLagan 2004; Maon *et al.* 2008; Nilsson, 2008; Starr, 2008) as well as studies finding that altruistic and biospheric values and motives matter in explaining pro-social behaviour and behavioural intentions (Bénabou & Tirole, 2010; Steg *et al.*, 2014). The finding is also in alignment with the OECD (2009) and the second PRI principle of incorporating ESG issues into ownership policies and practices that is, accounting for responsibility both in strategy and in their daily investment operations. This also supports recent regulations from the (EU, 2014ab) and relates to long-term value creation

(Juravle & Lewis, 2008). Further, we establish that pension funds with strong financial focus but without responsibility focus do not have a responsible investment strategy. This finding supports the results of De Groot and Steg (2009) who argue that next to altruistic and biospheric values one has to account for egoistic values when explaining pro-social behaviour.

The implications of our study for investors are that peers that have already incorporated responsibility in their strategy manage to combine both responsibility focus and financial focus. Several studies indicate that responsibility does not harm returns, but actually provide better risk management. As for businesses, our results provide valuable information regarding what matters for their investors. When investors incorporate responsibility in strategy and in their investment operations, it means that the investment targets, i.e. businesses, have a strong incentive to align with these requirements. Investors' responsibility is to be further strengthened with future regulations, and with common aspiratory goals such as the UN's Sustainable Development Goals. This provides ample opportunities for businesses to benefit from their corporate social responsibility and to develop it further. The increasing amount of assets invested responsibly and the growing number of UN PRI signatories indicate that responsible investment is largely seen as a highly relevant topic for both the long-term strategy and daily operations of investors.

Our study is limited by the usual drawbacks of a survey approach, such as that the design is not very flexible, our questions might be inappropriate and the data is based on self-reporting of pension funds. Second, the findings are limited in generalisability to other types of financial institutions. Third, our methodology is not suitable to address causality issues and we cannot conclude if and how views held by the financial management of pension funds about responsibility focus and financial focus result in responsible investing. However, in reality, causality seems plausible when responsibility is taken from strategy to practice. It is also problematic that pension funds are not required to report about their actual financial focus or their actual achievements regarding responsibility focus in a systematic manner that is both verified and externally audited, as it would support with closing the gap between existing regulations and related reporting, and practice (Haigh and Guthrie, 2010). The requirement of the signatories of the

PRI to publically disclose their responsible investment reporting (see UN PRI, 2016c) may be the first step towards this.

To wrap up, our study addresses the extent to which responsibility focus and financial focus matter to pension funds regarding responsible investing from an empirical perspective. We explain how values transfer from the individual level to the pension fund level and to the governing body, and explain how the values and motives of pension funds relate to their strategy and investments. We apply an approach that has proven quite productive in environmental psychology literature to the fields of management and finance, and improve our understanding of a phenomenon that has attracted much interest, especially during the financial crisis of 2007-2009, as well as recently, namely that financial institutions should care about society.

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